



## BUILT TO TEST

*Thank you for reading our newsletter.*

*Our greatest asset, next to our experienced engineers and technicians, is our test facility. The company built the 53,000-square-foot structure 52 years ago to perform the tests we run today: fire, acoustical and structural. Its test chambers and furnaces were all put into place when the shell of the building was constructed.*

*Designing the test areas as an integral part of the building resulted in a superior test facility. For instance, our largest reverberation chamber has 1-ft.-thick solid masonry walls, floors and ceilings independently supported by springs recessed into the floor. Each of our nine acoustical test chambers is also independently supported by springs, and even the electrical conduits that span from chamber to chamber are joined by flexible couplings to ensure vibration isolation. The acoustical area includes specialty chambers for testing ceiling systems and products, as well as unique floor-ceiling chambers with overhead cranes for IIC/STC testing. All of this helps ensure data consistency and reliability for your acoustical test programs.*

*All of our fire test furnaces are constructed from heavy masonry. The wall test furnace includes hydraulics built into the floor that we use to place loads on test assemblies, as well as trolleys that allow our engineers to quickly slide an assembly out of the furnace and to position it for the fireman's hose portion of a test. Our full-scale floor-ceiling horizontal test furnace is built into the floor with overhead crane and loading capabilities.*

*High-capacity overhead cranes and trolleys, 27-ft. ceiling heights and large access doors allow us to handle the largest test assemblies and to store constructed assemblies long term. The facility includes large open spaces for test assembly construction and material storage.*

*Clients and visitors often comment that the construction and storage space in our testing facility is one of the best they have seen. Let us know if we can put this first-rate facility to work for your next test project so you can experience first-hand why we are "Built to Test" and "The Best in Test."*

*This edition of the newsletter explores our capabilities for floor-ceiling horizontal fire testing and large specimen handling. It also includes a technical story on wind load and related fenestration testing.*

*I hope you had a great summer. Thank you again for clicking in.*

**Bob Menchetti**

Director of Laboratory Facilities & Testing Services

## FOCUS ON: WIND TESTING

The arrival of hurricane season reminds us of the damage that high wind and wind-based hazards pose to building assemblies. The adjacent table gives examples of wind and pressure rates and the havoc wind can create. The Saffir Simpson Hurricane Wind Scale, for example, estimates potential hurricane damage based on sustained wind speed, with a rating of 1 to 5 (with 5 bringing the likelihood of

### WindSpeed

PRESSURE	LOAD	WIND SPEED	WIND SPEED	WIND SPEED	HURRICANE	TORNADO
inches of H <sub>2</sub> O	psf	mph	mph	mph	category	scale
0.25	1.3	18.03	16.12	5		brisk gale
0.50	2.6	25.50	22.80	6		
0.75	3.9	31.22	27.93	7		high wind
1.00	5.2	36.06	32.25	7		
1.25	6.5	40.31	36.06	8	F0	very high wind
1.50	7.8	44.16	39.50	8	F0	

wind speed, with a rating of F 0 (with a rating of F 0 or greater indicating the likelihood of severe catastrophe).

NGC Testing Services offers state-of-the art wind testing using our structural test wall. We can duplicate high wind pressures in accordance with ASTM E330 to see how building assemblies and materials resist damage. Our tests measure the wind resistance, air infiltration and water penetration of a wide range of building envelope products and systems, including windows, doors and curtain wall assemblies up to 18 ft. long and 12 ft. high.

For more information, [contact us today](#).



1.75	9.1	47.70	42.66	9	F0	
2.00	10.4	50.99	45.61	9	F0	storm
2.25	11.7	54.08	48.37	9	F0	
2.50	13.0	57.01	50.99	10	F0	
2.75	14.3	59.79	53.48	10	F0	great storm
3.00	15.6	62.45	55.96	10	F0	
3.25	16.9	65.00	58.14	11	F0	
3.50	18.2	67.45	60.33	11	F0	
3.75	19.5	69.82	62.45	11	F0	
4.00	20.8	72.11	64.59	11	F0	
4.25	22.1	74.33	66.48	12	F1	hurricane
4.50	23.4	76.49	68.41	1	F1	
4.75	24.7	78.58	70.29	1	F1	
5.00	26.0	80.62	72.11	1	F1	
5.25	27.3	82.61	73.89	1	F1	
5.50	28.6	84.56	75.63	1	F1	
5.75	29.9	86.46	77.33	1	F1	
6.00	31.2	88.32	78.99	1	F1	
6.25	32.5	90.14	80.62	1	F1	
6.50	33.8	91.92	82.22	1	F1	
6.75	35.1	93.67	83.79	1	F1	
7.00	36.4	95.39	85.32	1	F1	
7.25	37.7	97.08	86.83	2	F1	
7.50	39.0	98.74	88.32	2	F1	

[CLICK TO VIEW FULL SIZE](#) >

## FOCUS ON: HORIZONTAL FLOOR-CEILING FIRE TESTING

Full-scale horizontal floor-ceiling furnaces are extremely rare, and we have one of the best. Our 14 x 18 ft. furnace was part of the original building construction.

The furnace and furnace control center are recessed into a basement and sub-basement. Columns in each corner of the chamber support the test specimen above the burners. This design allows our engineers and clients to observe tests from basement-level observation ports into the furnace or from the unexposed side of the assembly flush at the lab's floor level.

In this furnace we can test the fire endurance of a wide range of assemblies.

These include completed roof and floor-ceiling assemblies, columns, beams and building joints. We have even tested subway cars!

The furnace meets ASTM E119 requirements and features:

- A 30-ton overhead crane
- Large access openings and truck access into the building to accommodate the largest pre-assembled test specimens
- Four test frames
- 80 burners
- 16 thermocouples (to measure temperatures at different points within the furnace)
- Full loading capabilities (the ability to test specimens under in-service live loads)
- Full hose stream test capabilities

We offer a wide range of tests in accordance with the following standards:

- ASTM E119
- UL 263
- NFPA 251
- CAN/ULC S101
- ASTM E814
- UL 1479
- NFPA 130
- UBC 26-2
- UL 2079

[Email](#) for more information.



# BIG AND HEAVY TEST ASSEMBLIES

Our big chambers, big doors and big cranes mean we can accommodate some of the largest test specimens. Here are some of the large, heavy items we have tested here at the lab.

- Subway cars
- Transit cars
- 14-ton highway barrier systems
- Large safes
- Truck trailer refrigerator units
- Ship bulkheads
- 40 ft. long roof assemblies
- Fully assembled log cabins
- Precast concrete slabs
- 14 ft. x 18 ft. exterior wall assemblies
- Ice cream cone simulated facade for ice cream store



# ANDY HEUER IN SOUND & VIBRATION

We're proud to share that Senior NGC Testing Engineer Andy Heuer was featured on the June cover of Sound & Vibration, one of the most widely read acoustical magazines. He is shown setting up a sound absorption test of a reference specimen in accordance with ASTM C423. The large rotating vane contains the source speakers and is supported separately and isolated from the chamber on a column-and-beam system outside the chamber.

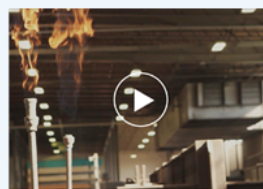


## TAKE A CLOSER LOOK!

Check out our new [brochure](#) and watch our [video](#) for the latest updates about NGC Testing Services' capabilities. We're ready to put your products to the test, and this is a great way to see all that we can do for you. Take a look and give us a call — let us know how we can help.



**DOWNLOAD  
OUR BROCHURE**



**WATCH  
OUR VIDEO**



**Bob Menchetti** | Director of Laboratory Facilities & Testing Services  
[rjmenchetti@ngctestingservices.com](mailto:rjmenchetti@ngctestingservices.com) | 716.873.9750 Ext. 341

**Please stay in touch!**

Send any email changes or additions to [info@ngctestingservices.com](mailto:info@ngctestingservices.com) so you can continue to receive *NGC Testing Services Update*.

